REMARKS/ARGUMENTS

These remarks are made in response to the Office Action of March 04, 2004 (Office Action). This response is being filed with a petition for a one month retro-active extension of time with the appropriate fee.

In paragraphs 2, 3, and 4 of the Office Action, claims 5, 10, 15, and 20 have been rejected under 35 U.S.C. §112 as failing to comply with the enablement requirements because the term "CDN" has not been defined in the specification or the drawings. Applicants herein assert that CDN is an acronym for content delivery network (CDN) defined as a heterogeneous system having a plurality of components. Applicants agree, however, with the Examiner's comments that the term was not defined in the specification. Accordingly, Applications have amended the claims so that the terms "heterogeneous system" appear in place of "CDN." Applicants have further amended the Brief Description of the Drawings on page 8 to remove any references to the term "CDN." Applicants' invention provides support for the usage of the term heterogeneous system, as shown at page 9, lines 17-24 and throughout the specification.

In paragraph 5, claims 2-4, 5-9, 11-14, 16-19, and 21-24 have been rejected under 35 U.S.C. §112 for improper claim dependency. In response, claims 2-4 have been amended to be dependent upon independent claim 1. Claims 6-9 have been amended to be dependent upon independent claim 5. Claims 11-14 have been amended to be dependent upon independent claim 10. Claims 16-19 have been amended to be dependent upon independent claim 15. Claims 21-24 have been amended to be dependent upon independent claim 20.

Further, in paragraph 5, the Examiner has indicated that a cross-reference to related applications section is missing in the Applicants submission. Specifically, the Examiner states that application 09/865,368 should be included in such a section under 37 CFR §1.78 and MPEP 201.11. Applicants respectfully disagree, as Applicants are not claiming priority to one or more prior-filed co-pending nonprovisional applications.

In paragraphs 6-10 of the Office Action, claims 1-3, 5-8, 10-13, 15-18, 20-23 have been rejected under 35 U.S.C. § 102(a) as being anticipated by Canada Patent Application 2,287,844 to D'ippolito, Tommaso, *et al.* (Tommaso). In paragraphs 11-12 of the Office Action, claims 4, 9, 14, 19, and 24 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tommaso in view of U.S. Patent Number 6,622,171 to Gupta, *et al.* (Gupta).

In response, Applicants have amended claims 1, 5, 15, and 20 to clarify that data for temporally coordinating interactions among entities is stored in a database along with entity metrics provided by an agent. This temporal data is used to display interactions among components when playing back network events that have previously occurred.

Support for these amendments can be found throughout the specification. For example, at page 23, line 9-10 the control buttons shown in FIG. 4 "can control the retrieval and playback of the data stored in database 60." FIG. 4 in general shows that previously occurring network events can be played back upon a display.

The storing of temporal data in a datastore is asserted at page 22, lines 1-3. The identifier that is used to record the time can be a time stamp, a sequence number, and the like, as noted at page 22, lines 4-7. Moreover, the use of an agent to gather the metrics and provide them to the displaying entity is shown in FIG. 1 by items 30-1, 30-2, and 30-3. Additionally, FIG. 2, item 10 shows that the interactions among components can be displayed, as explicitly stated at page 13, lines 10-13.

Applicants have amended claims 2, 7, 12, 17, and 22 to clarify that a starting time and ending time (as opposed to a network location) can be used as boundary conditions for retrieving metric values, as stated at page 9, lines 11-15.

Applicants have amended claims 3, 11, and 18 to clarify that an interface utilized by the displaying step to display previously occurring network events can be capable of displaying network events in real-time, as stated at page 10, lines 4-7. Accordingly, a single interface can selectively display either previously occurring network events and/or presently occurring network events, where the display can show interactions among events

Applicants have amended claim 5, 10, and 20 to clarify that agents can process metrics in an entity-independent manner, as shown in FIG. 1 by items 30-1, 30-2, and 30-3 as well as at page 14, lines 18-23.

Applicants have amended claim 10 and added claim 25 to clarify that agents can be configured to selectively utilize a datastore and/or communication components as information sources. When the datastore is utilized as an information source, previously occurring network events can be presented in a graphical interface. When the communication components are used

as information sources, network events can be presented in the graphical interface in real-time. Support for these amendments can be found in FIGS. 1 and 3.

Applicants have amended claim 11 to clarify that when data is presented real-time, the data can be simultaneously stored in a datastore for future playback, as shown at page 9, lines 9-11. No new matter has been added as a result of these amendments.

Prior to addressing the rejections on the art, a brief review of the Applicants' invention is in order. The Applicants' claimed and disclosed subject matter teaches a system, a method, and an apparatus for a network monitoring system having playback capabilities. In one embodiment, a multitude of software agents can gather metrics from a multitude of distributed network components in a component-independent fashion. The software agents can process the metrics and present processed results upon a display map. The display map can present network information in a manner that shows component interconnectivity. In one configuration, the software agents can operate in real-time, resulting in the data being displayed in real-time. In another configuration, the software agents can record component data and component interconnectivity data in a database for later presentation. In another configuration, the software agents can selectively receive input from either a data file and/or from a network component and present output to a common graphical interface regardless of input source.

Playback functions can permit the data gathered by the software agents to be displayed in a user-controlled fashion after network events have occurred. The playback can control the temporal presentation of the data. Playback functions can include, but are not limited to, playing, forwarding, fast forwarding, rewinding, fast rewinding, pausing, stepping, and/or stopping.

Turning specifically to the rejections on the art, in paragraphs 6-10 of the Office Action, claims 1-3, 5-8, 10-13, 15-18, 20-23 have been rejected under 35 U.S.C. § 102(a) as being anticipated by Tommaso. Tommaso discloses a presentation method for providing information about the performance of a communication network that simultaneously displays a pictorial representation and a data representation of received network data.

Tommaso does not disclose a playback feature, as admitted by the Examiner in paragraph 12 of the Office Action. Further, Tommaso does not display interactions among network

components in a stepwise fashion. Moreover, Tommaso does not store temporal data relating to network events so that network events can be graphically shown in a stepwise fashion.

Referring to claims 1 and 15, claims 1 and 15 include the steps of:

> storing in a datastore, values corresponding to predefined metrics received from an agent, each of said values representing a characteristic of one of a plurality of entities in a data space, wherein data for temporally coordinating interactions among the entities is also stored in the datastore;
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> retrieving said stored values from said datastore; and
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> displaying said retrieved values for selected ones of said predefined metrics for sequential viewing, on a graphical display, previously occurring network events involving the entities, wherein the displaying step utilizes previously stored temporal data to display interactions among at least a portion of the entities in a time sequenced manner

Applicants specifically claim storing temporal data for coordinating interactions among entities so that these interactions can be displayed for a user-selected network event in a time sequenced manner. For example, the buttons of FIG. 4 can be used to control the playback using controls 405, 410, 415, 425, 430, 435, and the like, as described at page 23, lines 6-23. The stored temporal data can be shown in the time display window 440 and controlled via the controls of FIG. 4. The selection of each control can control a post-performance monitoring session, displayed in a corresponding node map window, such as window 5 of FIG. 1 and/or the display shown in FIG. 2, as detailed on page 10, lines 9-11 and further detailed between page 23, line 4 and page 24, line 12.

In contrast, Tommaso is silent as to storing temporal information for coordinating interactions among entities. Further, Tommaso is silent with regard to conducting post-performance monitoring sessions and with regard to displaying interactions among entities in a time sequenced fashion. The only interactions among network components detailed by Tommaso relates to pictorial representations of realtime events (shown in FIG. 2). There, Tommaso teaches that warnings can be provided responsive to previously established network thresholds being exceeded, as detailed at page 11, lines 5-22.

Tommaso fails to teach the display of previous occurring network events based upon data stored in a data store. Instead, Tommaso only teaches the display of real-time data, as stated at page 11, lines 5-9. The intension that Tommaso is not to be used to display previous network

events is emphasized by the temporary memory 72 of FIG. 2 that holds network data. Further, the system disclosed by Tommaso fails to include a persistent storage for network data, which would be necessary to establish post-performance monitoring sessions. Accordingly, Tommaso contemplates only real-time network metric monitoring and not the post-performance monitoring sessions and corresponding data displays taught by the Applicants. Consequently, Tommaso fails to anticipate the Applicants invention as claimed and the 35 U.S.C. § 102(a) rejections as to claims 1-3 and 15-18 should be withdrawn, which action is respectfully requested.

Referring to claims 5 and 20, Applicants explicitly claim the "displaying of retrieved metrics for sequential playback on a graphical display." In paragraph 12, the Examiner acknowledges that Tommaso fails to teach playback functionality. Consequently, Tommaso fails to anticipate claims 5 and 20.

Additionally, as previously stated herein, Tommaso only discloses real-time network monitoring. See page 11, lines 5-9. In contrast, Applicants claim the step of:

> identifying a previously occurring network event involving components associated with the at least one agent

Tommaso never teaches the identification of a previously occurring network event, nor does Tommaso teach storing metrics for previously occurring network events, and subsequently retrieving the stored metrics responsive to the identifying step. In fact, because Tommaso uses temporary memory 72 for metric storage purposes, the system disclosed by Tommaso would lack the capability to retrieve data related to identified network events that have previously occurred, as claimed in claims 5 and 20. For this reason also, Tommaso fails to anticipate claims 5 and 20.

Further, the Applicants claim that an agent is configured to process received values in an entity-independent manner, as shown in FIG. 1 by bots 30-1, 30-2, and 20-3 as well as in FIG. 3 by bots 330, 325, and 345. That is, an agent can be an autonomous software object not constrained to monitoring a particular network entity. In contrast, Tommaso states at page 6, lines 10-17 that each termination equipment 12-22 includes a data gathering program for monitoring performance parameters of the termination equipment in which the data gathering program is contained. Accordingly, the data gathering program of Tommaso is entity (termination equipment) specific.

It should be appreciated that constructing the agents in an entity-independent manner establishes a layer of abstraction between monitored network components and a metric using

program, thereby adding significant flexibility to a network monitoring solution that can enhance modifiability, maintenance, and standardize/modularize metric gathering routines. For example, bots 30-1, 30-2, and 20-3 can be managed by a single bot manager in one aspect of the Applicant's invention, as stated at page 15, lines 7-8. As Tommaso fails to disclose entity-independent agents, Tommaso fails to anticipate claims 5 and 20. For all of the reasons above, the 35 U.S.C. § 102(a) rejections as to claims 5-8 and 20-23 should be withdrawn, which action is respectfully requested.

Referring to claims 6 and 21, Applicants claim:

> storing values sequentially in time as said values are collected along with data for temporally coordinating interactions among the components.

Tommaso does not teach at page 16, lines 2-10 that values are stored sequentially in time. As previously stated, Tommaso fails to teach that data is to be stored in any area other than temporary memory 72. Tommaso is silent in regard to permanently storing data for later retrieval. Tommaso also does not display previously occurring interactions among network components. Consequently, Tommaso fails to teach temporally coordinating interactions among components using stored values. For these reasons, the 35 U.S.C. § 102(a) rejections as to claims 6 and 21 should be withdrawn, which action is respectfully requested.

Referring to claim 10, Applicants claim "at least one agent configured to gather and process metrics from a plurality of communication components. Tommaso discloses at page 6, lines 10-17 that a program is to monitor values for a discrete communication equipment 12-22 in which the program is disposed. Accordingly, Tommaso fails to teach that a single agent gathers and processes metrics from more than one communication component, as specifically claimed by the Applicants. Additionally, Tommaso fails to teach that an agent is to gather and process metrics "in a component-independent fashion" as claimed by the Applicants. Instead, Tommaso teaches that a program is to gather metrics in a manner related to a specific piece of communication equipment 12-22, thereby teaching a component-specific metric gathering methodology.

Further, Applicants claim "an interface for sequentially playing back component interactions." Tommaso fails to disclose a playback feature as admitted by the Examiner in paragraph 12 of the Office Action.

Moreover, Applicants claim "agents are configured to selectively utilize the datastore and the communication components as information sources." That is, the interface displays network information using the agents as an input source. When the agents use a datastore as an information source, the interface displays previously occurring network events that have been recorded in the datastore. When the agents use communication components as an information source, the interface displays real-time network events. Accordingly, this claim enables the utilization of a single interface for displaying both real-time and previously events, where the selection of the displayed content occurs independent of the interface.

In contrast, Tommaso fails to teach any equivalent mechanism, and instead teaches that "a data gathering program collects data in real time and stores such data in the database 26 at the termination equipment," as noted at page 6, lines 16-17. Consequently, Tommaso fails to anticipate claims 10-13 and the 35 U.S.C. § 102(a) rejections of these claims should be withdrawn, which action is respectfully requested.

Referring to claim 11, Applicants teach that network values can be stored in real-time as the values are presented within the graphical interface in real-time. These stored values can be used to initiate a post-event monitoring session of previously occurring events in the future. Tommaso fails to teach retaining values within a datastore as the values are displayed. Instead, Tommaso uses a temporary memory 72 to store values for display. Tommaso is silent as to the utilization of these values after the display, yet the silence coupled with the utilization of a non persistent memory indicates that the subject matter of Tommaso cannot simultaneously store values for later usage and use the values for display purposes in real time.

Referring to claims 2, 7, 12, 17, and 22, Applicants teach the steps of:

> determining a starting time and an ending time of said stored values to be retrieved; and
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> acquiring said sequentially stored values from said starting time to said ending time.

The referenced portions of Tommaso (page 12, lines 19-22, page 16, lines 2-10, FIG. 7, and FIG. 12), however, have nothing to do with using a starting time and/or an ending time as boundaries for displaying network activity occurring between these time boundaries. Instead, the cited portions of Tommaso are for establishing threshold values (including a time as noted on page 16)

for purposes of conveying notices to an administrator should the thresholds be exceeded. Consequently, Tommaso fails to anticipate the Applicants' invention as claimed and the 35 U.S.C. § 102(a) rejections as to claims 2, 7, 12, 17, and 22 should be withdrawn, which action is respectfully requested.

Referring to claims 3 and 18, the display and corresponding interface disclosed by Tommaso is silent in regard to being able to display network events in either real-time or based upon previously occurring events. Such a capability can permit an administrator to monitor network events in real-time and/or based on historic data using a single, common interface. This capability is not disclosed in any fashion by Tommaso, which only discloses displaying real-time network occurrences. Consequently, Tommaso fails to anticipate the Applicants invention as claimed and the 35 U.S.C. § 102(a) rejections as to claims 3 and 18 should be withdrawn, which action is respectfully requested.

In paragraphs 11-12 of the Office Action, claims 4, 9, 14, 19, and 24 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tommaso in view of Gupta. Gupta discloses a method to selectively adjust the speed at which streamed audio and video is played upon a client computer.

There is no motivation to combine the teachings of Tommaso and Gupta for purposes of playback of network events. Applicants are at a loss as to why the Examiner believes the streaming of audio/visual information relates to network monitoring. Tommaso fails to relate network monitoring and/or management activities with streaming audio/video information in any fashion. Additionally, Tommaso fails to teach or suggest playing back metrics or performing post-network event monitoring in any fashion. Further, Tommaso fails to teach or suggest that temporal data should be recorded along with network metrics so that later stepwise simulations of network activity can be constructed. Similarly, Gupta does not teach or suggest that the disclosed audio/video technique could be utilized for network management in any fashion.

To clarify differences between Tommaso and Gupta and to emphasize why a skilled software engineer would not combine the teachings of Tommaso and Gupta, Applicants will briefly detail a few specifics concerning streaming audio/video information, as disclosed in Gupta. The streaming of audio/video information requires a time-sequenced information source consisting of audio and/or images, which can be digitally encoded. A decoder (as shown in FIG.

3 of Gupta) is used to decode this information and render it upon a presentation device. This process often uses a fixed size of digitally encoded information for rendering a time-splice of audio or video. For example, audio can be encoded as 1.5 Mbits/second. The size of each time-splice and/or sample can vary depending upon a sampling rate and a desired fidelity of rendered audio/video content. Gupta concerns itself with permitting a recipient of digitally encoded data to selectively vary the rendered sampling rate in a uniform fashion to time-scale modify audio/video presentation.

The teachings of Gupta are inapplicable outside the scope of digitally encoded audio/video data. Neither the Applicants submission nor Tommaso relates to rendering digitally encoded audio/video information. Consequently, Tommaso and Gupta should not be combined for purposes of 35 U.S.C. § 103(a) in regard to the present invention and the 35 U.S.C. § 103(a) rejections as to claims 4, 9, 14, 19, and 24 should be withdrawn, which action is respectfully requested.

If one were to inexplicably combine Tommaso with Gupta, Gupta nevertheless fails to cure the deficiencies of Tommaso. Neither Tommaso nor Gupta teach or suggest the playback of network events. Neither Tommaso nor Gupta teach or suggest displaying previously occurring network events in a stepwise fashion. Neither Tommaso nor Gupta teach or suggest providing an interface that permits users to control a rate of presentation of network metrics. Neither Tommaso nor Gupta teach or suggest storing temporal data to temporally coordinate interactions among network entities when displaying previously occurring network data. Neither Tommaso nor Gupta teach or suggest using a single interface to display real-time and post-event network occurrences. Neither Tommaso nor Gupta teach or suggest using agents to gather network metrics in an entity-independent manner. Consequently, the present invention is not obvious based upon Tommaso in view of Gupta. Accordingly, Applicants respectfully request a withdrawal of the rejections against claims 4, 9, 14, 19, and 24.

Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

Date: 11 June 2004

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